

... declare that

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled **CELL TARGETING METHODS AND COMPOSITIONS**, the specification of which:

(check one) ☐ is attached hereto.

☐ was filed on \_\_\_\_\_ as Application Serial No. \_\_\_\_\_  
and was amended on \_\_\_\_\_ (if applicable).

☒ was filed on March 22, 2004 as International Application No. PCT/US2004/008763  
and was amended on \_\_\_\_\_  
by ☐ Preliminary Amendment ☐ Article 19; ☐ Article 34 (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim priority benefits under Title 35, United States Code, §119 of any provisional application(s) listed below and have also identified below any provisional application(s) having a filing date before that of the application on which priority is claimed:

Prior Provisional Application(s):

<u>60/457,151</u> (Number)	<u>24 March, 2003</u> (Day/Month/Year Filed)	Priority Claimed <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
_____ (Number)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes <input type="checkbox"/> No

I hereby claim the benefit under United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

<u>60/457,151</u> (Application Serial No.)	<u>24 March, 2003</u> (Filing Date)	<u>Patented</u> (Status-patented, pending, abandoned)
_____ (Application Serial No.)	_____ (Filing Date)	_____ (Status-patented, pending, abandoned)

Power of Attorney: As a named inventor, I hereby appoint the following attorneys: Thomas L. Tarolli, Reg. No. 20,177; Robert B. Sundheim, Reg. No. 20,127; Calvin G. Covell, Reg. No. 24,042; Barry L. Tummino, Reg. No. 29,709; James L. Tarolli, Reg. No. 36,029; Richard S. Wesorick, Reg. No. 40,871; Richard A. Sutkus, Reg. No. 43,941; Matthew M. Shaheen, Reg. No. 45,367; Gary J. Pitzer, Reg. No. 39,334; and Christopher P. Harris, Reg. No. 43,660, each with full powers of substitution and revocation to prosecute this application and transact all business in the United States Patent and Trademark Office connected therewith.

SEND CORRESPONDENCE TO: **TAROLLI, SUNDHEIM, COVELL & TUMMINO L.L.P.**  
**526 SUPERIOR AVENUE, SUITE 1111**  
**CLEVELAND, OHIO 44114-1400**  
DIRECT TELEPHONE CALLS TO: **RICHARD S. WESORICK, (216) 621-2234**

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

1) Full name of sole or first inventor ARNOLD I. CAPLAN

Inventor's signature _____	Date _____
Residence <u>CLEVELAND HEIGHTS, OHIO</u>	Citizenship <u>U.S.A.</u>
Post Office Address <u>1300 OAKRIDGE DRIVE, CLEVELAND HEIGHTS, OH-44121</u>	County <u>CUYAHOGA</u>

2) Full name of second inventor JAMES E. DENNIS

Inventor's signature _____	Date _____
Residence <u>CLEVELAND HEIGHTS, OHIO</u>	Citizenship <u>U.S.A.</u>
Post Office Address <u>1593 MAPLE ROAD, CLEVELAND HEIGHTS, OH-44121</u>	County <u>CUYAHOGA</u>



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
ASSISTANT SECRETARY AND COMMISSIONER  
OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231



\*800010189A\*

FEBRUARY 10, 2004

PTAS

ROPES & GRAY LLP  
ONE INTERNATIONAL PLACE  
BOSTON, MA 02110-2624

UNITED STATES PATENT AND TRADEMARK OFFICE  
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 703-308-9723. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, ASSIGNMENT DIVISION, BOX ASSIGNMENTS, CG-4, 1213 JEFFERSON DAVIS HWY, SUITE 320, WASHINGTON, D.C. 20231.

RECORDATION DATE: 02/10/2004

REEL/FRAME: 014319/0482  
NUMBER OF PAGES: 4

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:  
CAPLAN, ARNOLD I.

DOC DATE: 09/05/2003

ASSIGNOR:  
DENNIS, JAMES E.

DOC DATE: 09/05/2003

ASSIGNEE:  
CASE WESTERN RESERVE UNIVERSITY  
10900 EUCLID AVENUE  
CLEVELAND, OHIO 44106-7219

SERIAL NUMBER: 60457151  
PATENT NUMBER:

FILING DATE: 03/24/2003  
ISSUE DATE:

014319/0482 PAGE 2

SAUNDRA BALLENGER, EXAMINER  
ASSIGNMENT DIVISION  
OFFICE OF PUBLIC RECORDS

## PATENT ASSIGNMENT

Electronic Version v07  
Stylesheet Version v02

02/10/2004  
800010189

SUBMISSION TYPE:	NEW ASSIGNMENT												
NATURE OF CONVEYANCE:	ASSIGNMENT OF ASSIGNOR'S INTEREST												
CONVEYING PARTY DATA													
<table border="1"><thead><tr><th>Name</th><th>Execution Date</th></tr></thead><tbody><tr><td>Arnold I. Caplan</td><td>2003-09-05</td></tr><tr><td>James E. Dennis</td><td>2003-09-05</td></tr></tbody></table>	Name	Execution Date	Arnold I. Caplan	2003-09-05	James E. Dennis	2003-09-05							
Name	Execution Date												
Arnold I. Caplan	2003-09-05												
James E. Dennis	2003-09-05												
RECEIVING PARTY DATA													
<table border="1"><thead><tr><th>Name</th><th>Street Address</th><th>Internal Address</th><th>City</th><th>State/Country</th><th>Postal Code</th></tr></thead><tbody><tr><td>Case Western Reserve University</td><td>10900 Euclid Avenue</td><td></td><td>Cleveland</td><td>OH</td><td>44106-7219</td></tr></tbody></table>	Name	Street Address	Internal Address	City	State/Country	Postal Code	Case Western Reserve University	10900 Euclid Avenue		Cleveland	OH	44106-7219	
Name	Street Address	Internal Address	City	State/Country	Postal Code								
Case Western Reserve University	10900 Euclid Avenue		Cleveland	OH	44106-7219								
PROPERTY NUMBERS Total: 1													
<table border="1"><thead><tr><th>Property Type</th><th>Number</th></tr></thead><tbody><tr><td>Application Number</td><td>60457151</td></tr></tbody></table>	Property Type	Number	Application Number	60457151									
Property Type	Number												
Application Number	60457151												
CORRESPONDENCE DATA													
FAX NUMBER: (617) 951-7050 <i>Correspondence will be sent via US Mail when the fax attempt is unsuccessful.</i> When the customer number has been provided, the Office of Public Records will obtain the correspondence data from the official record on file at the USPTO. CUSTOMER NUMBER: 28120													
NAME OF PERSON SIGNING:	Patricia Granahan												
DATE SIGNED:	2004-02-10												
Total Attachments: 3 source=CWRUP61013-usassn-A000001.tif source=CWRUP61013-usassn-A000002.tif source=CWRUP61013-usassn-A000003.tif													

UNITED STATES PATENT AND TRADEMARK OFFICE  
ACKNOWLEDGEMENT RECEIPT

Electronic Version  
Stylesheet Version v1.1.1

Title of  
Invention

CELL TARGETING METHODS AND COMPOSITIONS

Submission Type: Patent Assignment

Application Number: 60/457151

\*60/457151\*

EFS ID: 55175

Server Response:

Confirmation Code	Message
ISVR1	Submission was successfully submitted - Even if Informational or Warning Messages appear below, please do not resubmit this application
ICON1	5721
ISYS5	Filename= N/A BusinessRule= Validation System/Function Call Information. #Supporting Msg:Server unable to validate the Confirmaton/Application numbers at this time. They will be checked by PTO personnel later.

First Named Applicant: Arnold Caplan

Attorney Docket Number: CWRU-P61-013

Timestamp: 2004-02-10 14:22:25 EDT

From: us

File Listing:

Doc. Name	File Name	Size (Bytes)
us-assignment	CWRUP61013-usassn.xml	2063
us-assignment	us-assignment.dtd	10898
us-assignment	us-assignment.xsl	8983
us-assignment	CWRUP61013-usassn-A000001.tif	1053896
us-assignment	CWRUP61013-usassn-A000002.tif	1053896
us-assignment	CWRUP61013-usassn-A000003.tif	1053896
us-fee-sheet	CWRUP61013-usfees.xml	1470

us-fee-sheet	us-fee-sheet.dtd	11069
us-fee-sheet	us-fee-sheet.xsl	24912
package-data	CWRUP61013-pkda.xml	2985
package-data	package-data.dtd	27025
package-data	us-package-data.xsl	19263
Total files size		3270356

Message Digest: 0a7386e37eeb44d9c0d92f3e051538e971416ac5

Digital Certificate Holder Name: cn=Patricia Granahan,ou=Registered Attorneys,ou=Patent and Trademark Office,ou=Department of Commerce,o=U.S. Government,c=US

TRANSMITTAL
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Electronic Version

Stylesheet Version v1.1.0

Title of Invention	CELL TARGETING METHODS AND COMPOSITIONS
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Application Number: 60/457151 \*60/457151\*

Date: 2003-03-24

First Named Applicant: Arnold I. Caplan

Confirmation Number: 5721

Attorney Docket Number: CWRU-P61-013

I hereby certify that the use of this system is for OFFICIAL correspondence between patent applicants or their representatives and the USPTO. Fraudulent or other use besides the filing of official correspondence by authorized parties is strictly prohibited, and subject to a fine and/or imprisonment under applicable law.

I, the undersigned, certify that I have viewed a display of document(s) being electronically submitted to the United States Patent and Trademark Office, using either the USPTO provided style sheet or software, and that this is the document(s) I intend for initiation or further prosecution of a patent application noted in the submission. This document(s) will become part of the official electronic record at the USPTO.

Submitted by:	Elec. Sign.
Patricia Granahan Registered Number: 32,227	/pg/

Documents being submitted

us-assignment

Files

CWRUP61013-usassn.xml

us-assignment.dtd

us-assignment.xsl

CWRUP61013-usassn-A000001.tif

CWRUP61013-usassn-A000002.tif

CWRUP61013-usassn-A000003.tif

us-fee-sheet

CWRUP61013-usfees.xml

us-fee-sheet.dtd

us-fee-sheet.xsl

Comments

IPDAS Version 3.2.1, Validation Version 1.1.1.2, Submission Version 1.1.0.5



PATENT ASSIGNMENT

Electronic Version v07

Stylesheet Version v02

SUBMISSION TYPE:

NEW ASSIGNMENT

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ASSIGNMENT OF ASSIGNOR'S INTEREST

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Name	Execution Date
Arnold I. Caplan	2003-09-05
James E. Dennis	2003-09-05

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Name	Street Address	Internal Address	City	State/Country	Postal Code
Case Western Reserve University	10900 Euclid Avenue		Cleveland	OH	44106-7219

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number	60457151

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CUSTOMER NUMBER: 28120

NAME OF PERSON SIGNING:

Patricia Granahan

DATE SIGNED:

2004-02-10

Total Attachments: 3

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source=CWRUP61013-usassn-A000003.tif

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# FEE TRANSMITTAL

Electronic Version v08

Stylesheet Version v08.0

Title of  
Invention

CELL TARGETING METHODS AND COMPOSITIONS

Application Number: 60/457151 \*60/457151\*

Date: 2004-02-10

First Named Applicant: Arnold I. Caplan

Attorney Docket Number: CWRU-P61-013

Art Unit: N/A

Examiner: Not Yet Assigned

**TOTAL FEE AUTHORIZED \$40**

Patent fees are subject to annual revisions on or about October 1st of each year.

## ASSIGNMENT FEES

Fee Description	Property Number	Quantity	Fee Code	Amount \$	Fee Paid \$
Recording Each Patent Assignment Per Property Fee		1	8021	40	40
Subtotal For Additional Fees: \$40					

## AUTHORIZED BILLING INFORMATION

The commissioner is hereby authorized to charge indicated fees and credit any overpayments to:

Deposit account number: 181945

Access Code \*\*\*\*\*

Deposit name: Ropes & Gray LLP

Deposit authorized name: Patricia Granahan

Signature:

/pg/

Date (YYYYMMDD):

2004-02-10

## ASSIGNMENT

WHEREAS, each of the Undersigned has developed certain inventions described in U.S. provisional patent application titled:

### CELL TARGETING METHODS AND COMPOSTIONS

filed on March 24, 2003, and assigned U.S. Provisional Application No. 60/457,151; and has full right to convey their entire interest, both legal and equitable, in and to said inventions free from all prior assignments, agreements, licenses, mortgages, security interests, or other encumbrances whatsoever; and

WHEREAS, Case Western Reserve University, an Ohio nonprofit corporation with offices at 10900 Euclid Avenue, Cleveland, Ohio 44106, ("ASSIGNEE"), is desirous of acquiring the entire right, title and interest in and to said invention or inventions and any and all patents to be obtained therefor;

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by each of the Undersigned, each of the Undersigned hereby sells, assigns and transfers unto said ASSIGNEE, its successors and assigns, their entire right, title and interest in and to said invention or inventions, as described in the aforesaid application and all applications resulting therefrom, including any and all divisions, continuations, continuations in part, substitute applications, and reissues or extensions thereof; and all resulting patents.

AND each of the Undersigned hereby authorizes and requests the issuing authority to issue any and all patents on said application or applications to said ASSIGNEE or its successors and assigns; the Undersigned agree(s) that the agent of record in said application shall hereinafter act on behalf of said ASSIGNEE.

AND, each of the Undersigned further agrees, without any further payment or compensation by said ASSIGNEE or its successors and assigns, to communicate to said ASSIGNEE, its representatives or agents or its successors and assigns, any facts relating to said invention or inventions including evidence for interference purposes or for other legal proceedings whenever requested; to testify in any interference or other legal proceedings, whenever requested; to execute and deliver, on request, all lawful papers required to make any of the foregoing provisions effective; and to generally do everything possible to aid said ASSIGNEE, its successors or assigns and nominees to secure, obtain and enforce proper patent protection for said invention or inventions in this or any foreign country.

Each of the undersigned hereby authorizes Ropes & Gray, of One International Place, Boston, MA 02110, to insert hereon any further identification information necessary or desirable for recordation of this document.

WITNESS my hand this 5 day of Sept, 2003.

By:

Arnold Caplan  
Arnold Caplan

State of \_\_\_\_\_ )  
County of \_\_\_\_\_ )

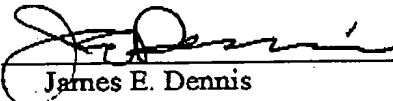
On this the 5 day of Sept, 2003, before me personally appeared Arnold Caplan to me personally known, and known to me to be the person who signed the foregoing assignment, and acknowledged the signing of same as his free act and deed.

Carmela Thomas  
Notary Public

My commission expires \_\_\_\_\_


CARMELA THOMAS, NOTARY PUBLIC  
IN AND FOR THE STATE OF OHIO  
MY COMMISSION EXPIRES NOV. 1, 2004

WITNESS my hand this 5 day of Sept., 2003.

By:   
James E. Dennis

State of \_\_\_\_\_ )  
County of \_\_\_\_\_ )

On this the 5 day of Sept., 2003, before me personally appeared James E. Dennisto me personally known, and known to me to be the person who signed the foregoing assignment, and acknowledged the signing of same as his free act and deed.

  
Notary Public

My commission expires \_\_\_\_\_  
CARMELA THOMAS, NOTARY PUBLIC  
IN AND FOR THE STATE OF OHIO  
MY COMMISSION EXPIRES NOV. 1, 2004